

IT IS CLAIMED:

1. An exercise machine, comprising:  
a first treadle having a first interior edge; and  
a second treadle having a second interior edge adjacent to the first interior edge of  
5 the first treadle;  
wherein the first and second interior edges include a low friction material.
2. An exercise machine, comprising:  
a first treadle having a first interior edge; and  
a second treadle having a second interior edge adjacent to the first interior edge of  
10 the first treadle;  
wherein the first and second interior edges define a sliding interface.
3. An exercise machine, comprising:  
a first treadle having a first interior edge; and  
a second treadle having a second interior edge adjacent to the first interior edge of  
15 the first treadle;  
wherein the first and second interior edges include a set of rollers.
4. An exercise machine, comprising:  
a first treadle having a moving belt surface;  
a second treadle having a moving belt surface; and  
20 a third treadle positioned between the first and second treadles, wherein the third  
treadle includes a low frictional top surface.

5. The exercise machine of claim 4, wherein the third treadle is a stationary treadle.

6. An exercise machine, comprising:  
a first treadle having a first plurality of adjacent, coplanar rollers defining a top  
5 surface; and  
a second treadle having a second plurality of adjacent, coplanar rollers defining a top surface.

7. The exercise machine of claim 6, wherein the first plurality of rollers are interconnected.

10 8. The exercise machine of claim 7, further comprising a drive mechanism for controllably rotating the first plurality of rollers.

9. An exercise machine, comprising:  
a frame;  
a first treadle having a belt, a treadle frame, and a pair of rollers located on  
15 opposite ends of the treadle frame, the belt positioned about the pair of rollers; and a pair of flanges upwardly extending from said frame and a rod extending through the treadle frame and through the pair of flanges.

10. An exercise machine, comprising:  
a frame;  
20 a first treadle having a belt, a treadle frame, and a pair of rollers located on a first and second end of the treadle frame, the belt positioned about the pair of rollers; and

means for pivotally coupling said treadle frame to the frame at a point between the first and second ends of the treadle frame.

11. An exercise machine, comprising:

a frame;

5 a first treadle having a belt, a treadle frame, and a set of three rollers defining a triangular shape, the belt positioned about the set of rollers; and

means for pivotally coupling the treadle to the frame at a location between the ends of the treadle surface.

12. The exercise machine of claim 11, wherein the set of three rollers includes  
10 and upper pair of rollers and a lower roller, said lower roller pivotally connected with said frame.

13. An exercise machine, comprising:

a frame;

a first treadle having a belt, a treadle frame, and a pair of rollers, the belt  
15 positioned about the rollers; and

a pivot link pivotally coupled to the frame at a first pivot point and pivotally coupled to the treadle at a second pivot point.

14. The exercise machine of claim 13, further comprising:

a spring connected between the frame and the treadle frame.

20 15. The exercise machine of claim 13, wherein as the first treadle is depressed, the treadle moves downwardly and rearwardly relative to the frame.

16. An exercise machine, comprising:  
a frame;  
a first treadle having a belt, a treadle frame, and a set of four rollers defining a trapezoid shape, the belt positioned about the four rollers; and  
5 means for pivotally coupling the treadle to the frame about a single pivot point.
17. The exercise machine of claim 16, wherein the treadle frame includes an upper frame portion coupled between a top pair of rollers and a lower frame portion coupled between a bottom pair of rollers.
18. The exercise machine of claim 17, wherein the upper and lower frame  
10 portions are coupled with a spring.
19. An exercise machine, comprising:  
a frame;  
a first treadle having a belt, a treadle frame, and a set of four rollers defining a parallelogram shape, the belt positioned about the four rollers; and  
15 means for pivotally coupling the treadle to the frame about a pair of fixed pivot points.
20. The exercise machine of claim 19, wherein the treadle frame includes an upper frame portion coupled between a top pair of rollers and a lower frame portion coupled between a bottom pair of rollers.
- 20 21. The exercise machine of claim 20, wherein the upper and lower frame portions are coupled with a spring.

22. An exercise machine, comprising:

a frame;

a first treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

5 a pivot link pivotally coupled to the frame at a first pivot point and pivotally coupled to the treadle at a second pivot point; and

a torsion spring connected between the frame and the pivot link.

23. The exercise machine of claim 22, wherein at the second pivot point, the pivot link is pivotally attached to the rear roller.

10 24. The exercise machine of claim 22, wherein at the second pivot point, the pivot link is pivotally attached to the treadle frame.

25. An exercise machine, comprising:

a frame;

15 a first treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a four bar linkage pivotally coupled to the frame at a first pivot point and pivotally coupled to the treadle at a second pivot point; and

a biasing spring connected between two bars of the linkage.

20 26. The exercise machine of claim 25, wherein as the first treadle is depressed, the treadle moves downwardly and forwardly relative to the frame.

27. The exercise machine of claim 25, wherein at the second pivot point, the pivot link is pivotally attached to the rear roller.

28. An exercise machine, comprising:

a frame including a first and second side support member;

5 a first treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a set of swing arms pivotally attached between said first side support member and the first treadle frame;

10 a second treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a set of swing arms pivotally attached between said second side support member and the second treadle frame; and

an interconnection means connecting said first treadle to the second treadle, whereby when said first treadle moves rearward, said second treadle moves forward.

15 29. The exercise machine of claim 28, wherein the interconnection means includes:

a first pulley proximate said first treadle;

a second pulley proximate said first treadle;

a third pulley proximate said second treadle;

20 a fourth pulley proximate said second treadle;

an axle fixedly attached between the second and third pulleys;

a first cable operatively connecting the first treadle to the second pulley; and  
a second cable operatively connecting the second treadle to the third pulley.

30. The exercise machine of claim 29, whereby when said first treadle moves rearward, the axle rotates and moves the second treadle forward.

5 31. An exercise machine, comprising:

a frame including a lower frame portion and a pair of vertical posts;

a first treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a first sleeve for slidably connecting the first treadle to the first vertical post;

10 a second sleeve for slidably connecting the second treadle to the second vertical post;

a set of pulleys; and

a cable connected to said first and second sleeves and connected about said pulleys, so that when the first treadle moves downward, said second treadle moves

15 upward.

32. The exercise machine of claim 31, wherein the first and second sleeves each include a coupling member defining pivot point connections to the first and second treadles, so that as the treadles move up or down, the treadles can pivot about the pivot points.

20 33. An exercise machine, comprising:

a frame including a first and second side support member;

a first treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a set of swing arms pivotally attached between said first side support member and the first treadle frame;

5 a second treadle having a belt, a treadle frame, and a front and rear roller, the belt positioned about the rollers;

a set of swing arms pivotally attached between said second side support member and the second treadle frame; and

a rocker arm assembly connecting said first treadle to the second treadle, whereby  
10 when said first treadle moves rearward, said second treadle moves forward.

34. The exercise machine of claim 33, wherein the rocker arm pivots about a vertical axis.

35. The exercise machine of claim 33, further comprising:

a spring biasingly positioning a first swing arm into a vertical orientation.

15 36. An exercise machine, comprising:

a frame;

a first treadle having a belt, a treadle frame, and a pair of rollers located on opposite ends of the treadle frame, the belt positioned about the pair of rollers; and

means for pivotally and fixedly coupling said treadle frame to the frame about a  
20 plurality of selectable positions.



37. The exercise machine of claim 36, wherein the means for pivotally coupling includes a pair of flanges upwardly extending from said frame and a rod extending through the treadle frame and through the pair of flanges.

38. The exercise machine of claim 37, wherein the pair of flanges include an  
5 arcuate slot therethrough.

39. An exercise machine, comprising:  
a frame;  
a first treadle pivotally coupled with said frame; and  
a position limiting element attached to said frame, said positioning limiting  
10 element limiting the pivotal movement of said treadle between a first point and a second point.

40. The exercise machine of claim 39, wherein the position limiting element includes a flange upwardly extending from said frame.

41. The exercise machine of claim 40, wherein the flange includes an arcuate  
15 slot therethrough.

42. An exercise machine, comprising:  
a frame;  
a first and second treadle pivotally coupled with said frame;  
a rocker arm connecting said first and second treadle; and  
20 a control attached to said frame, said control limiting the pivotal movement of said rocker arm.

43. The exercise machine of claim 42, wherein the control includes a set of cam elements attached about a cross support bar.

44. The exercise machine of claim 43, wherein the control includes a knob for selectively rotating the cam elements to engage the rocker arms.

5 45. An exercise machine, comprising:

at least one treadle having a non-continuous belt, a treadle deck, a treadle frame, and a first and second roller located on opposite ends of the treadle frame, the belt extending from the first roller over the deck to the second roller; and

at least one spring connected between the first roller and the treadle frame, said  
10 spring regulating the location of the non-continuous belt relative to the deck.

46. The exercise machine of claim 45, wherein first and second rollers each include a slot for securely receiving an end of the belt.

47. An exercise device comprising:

a first treadle operably mounted on a frame to pivot with respect to said frame;  
15 and

a first resistance element operably mounted between said frame and said first treadle, said first resistance element having a mounting position that is selectively movable within a range of mounting positions to adjust a position of said first treadle with respect to said frame.

20 48. The exercise device according to claim 47, further comprising:

a second treadle operably mounted on said frame to pivot with respect to said frame; and

a second resistance element operably mounted between said frame and second treadle, said second resistance element having a mounting position that is selectively  
5 movable to adjust a position of said second treadle with respect to said frame.

49. The exercise device as in claim 48, wherein:

said first resistance element is mounted to said frame by a first continuous adjustment structure to permit continuous adjustment of said mounting position of said first resistance element within said range of mounting positions for said first resistance  
10 element; and

said second resistance element is mounted by a second continuous adjustment structure to said frame to permit continuous adjustment of said mounting position of said second resistance element within said range of mounting positions for said second resistance element.

15 50. The exercise device as in claim 49, wherein at least one of said continuous adjustment structures is a lead screw.

51. The exercise device as in claim 50, wherein said lead screw is operably connected to a motor to rotate said lead screw.

20 52. The exercise device as in claim 48, wherein said first resistance element is mounted by a first discrete adjustment structure to said frame; and said second resistance element is mounted by a second discrete adjustment structure to said frame.

53. The exercise device as claimed in 52, wherein said first and second discrete adjustment structures comprise pop pin structures.

54. The exercise device as claimed in claim 48, wherein said first resistance element is mounted on an adjustment structure on said first treadle to selective adjust the mounting position of said first resistance element on said first treadle.

55. The exercise device as claimed in claim 47, wherein said resistance element is a shock.

56. A dual deck exercise device comprising:  
a first treadle operably mounted to a frame to pivot with respect to said frame,  
said first treadle including a first continuous tread;  
a second treadle operably mounted to said frame to pivot with respect to said frame, said second treadle including a second continuous tread;  
a first motor for producing a driving force for said first continuous tread; and  
a second motor for producing a driving force for said second continuous tread.

57. A dual deck exercise device as defined in claim 56, further comprising:  
a first driver roller driven by said first motor, said first driver roller being in contact with said first tread to apply said driving force from said first motor to said first continuous tread; and  
a second driver roller driven by said second motor, said second driver roller being in contact with said second tread to apply said driving force from said second motor to said second continuous tread.

58. The dual deck exercise device of claim 57, wherein said first motor is synchronized with said second motor to drive said first and second treads at substantially the same speed as each other.

59. The dual deck exercise device of claim 57, wherein said first motor and  
5 second motor can be separately controlled to simultaneously drive said first and second treads at different speeds from each other.

60. A treadle assembly for use in an exercise device, the treadle assembly comprising:

a frame;  
10 an upper deck spaced apart from and generally above said frame;  
a tread that is slidable across a top surface of said upper deck; and  
a suspension operably contacting said frame and said upper deck to hold said upper deck in position adjacent to and generally below said tread, said suspension cushioning said upper deck upon deflection of said upper deck towards said frame.

15 61. The treadle assembly of claim 60, wherein said suspension comprises at least one resilient member interposed between said frame and said upper deck.

62. The treadle assembly of claim 60, wherein said suspension comprises a plurality of resilient bumpers interposed between said frame and said upper deck.

63. The treadle assembly of claim 62, further comprising rollers rotatably  
20 connected to said frame, and wherein said tread is a continuous belt provided around said rollers.

64. An exercise device comprising a pair of the treadles as set forth in claim  
63.

65. The treadle assembly as set forth in claim 60, wherein said suspension  
comprises at least one rigid bumper interposed between said frame and said upper deck  
5 and at least one resilient bumper interposed between said frame and said upper deck.

66. The treadle assembly as set forth in 60, wherein said upper deck is  
cantilevered with respect to said frame, and wherein said suspension system comprises at  
least on resilient member interposed between said frame and said upper deck.

67. The treadle assembly of claim 60, wherein said suspension comprises:  
10 a resilient member interposed between said frame and said upper deck, said  
resilient member contacting a lower surface of said upper deck upon initial  
deflection of said upper deck towards said frame; and

a harder member interposed between said frame and said upper deck, said harder  
member being spaced apart from said lower surface of said upper deck upon initial  
15 deflection of said upper deck towards said frame.

68. The treadle assembly of claim 67, wherein said suspension comprises:  
a plurality of said resilient members, said plurality of resilient member cushioning  
said initial deflection of said upper deck towards said frame; and

a plurality of said harder members, said plurality of harder members acting as  
20 spacers to prevent excessive deflection of said upper deck towards said frame.

69. An exercise device comprising:

a frame;

a first treadle having a restrained end and a free end, said first treadle being pivotally attached to said frame proximate to said restrained end, said treadle including a tread portion formed by a top span of a continuous belt;

5 a motor for driving said belt on said treadle;

a first resistance device for opposing pivoting of said first treadle in at least one direction, said first resistance device operably attached between said frame and said treadle such that said treadle slopes downwardly from said restrained end to said free end;

a second treadle having a restrained end and a free end, said second treadle being  
10 pivotally attached to said frame proximate to said restrained end of said second treadle, said second treadle including a tread portion formed by a top span of a second continuous belt;

a second resistance device for opposing pivoting of said second treadle in at least one direction, said second resistance device operably attached between said frame and  
15 said second treadle such that said second treadle slopes downwardly from said restrained end to said free end of said second treadle; and

wherein said frame includes an upright, and wherein said restrained ends of said first and second treadles are pivotally attached to said upright.

70. The exercise device of claim 69, wherein said frame includes an upright  
20 and wherein said first resistance device is attached between said first treadle and said upright.

71. The exercise device of claim 69, wherein said first resistance device resists pivoting of said first treadle in both directions.

72. The exercise device in claim 69, wherein:  
an interconnect is operably associated with each treadle to cause one treadle to  
5 rise while the other one lowers; and  
said resistance devices do not include a spring return action.

73. The exercise device in claim 69, wherein:  
said resistance devices include one shock operably associated with each treadle.

74. The exercise device in claim 73, wherein:  
10 an interconnect is operably associated with each treadle to cause one treadle to  
rise while the other one lowers; and  
said at least one shock does not include a spring return action.

75. A dual deck exercise device comprising:  
a frame;  
15 a first treadle pivotally mounted on said frame;  
a second treadle pivotally mounted on said frame;  
a dependency structure operably associated with both treadles and mounted to  
said frame such that when either treadle is pushed down, the other treadle is pushed up;  
and



a resistance mechanism operably associated with said dependency structure to provide resistance to movement of said first and second treadles by resisting movement of said dependency structure.

76. An exercise device as claimed in 75, wherein said dependency device is a  
5 rocking arm.

77. An exercise device as claimed in 75, wherein:  
said resistance mechanism is a rotational brake.

78. An exercise device as claimed in 75, wherein:  
aid resistance mechanism is an electro-magnetic brake.

10 79. An exercise device as claimed in 75, wherein:  
said resistance mechanism is a hydraulic mechanism.

80. An exercise device comprising:  
a frame, said frame having a range of attachment locations;  
a first treadle pivotally mounted to said frame to pivot in a generally vertical  
15 plane;

a first resistance device having a top end and a bottom end, said bottom end of  
said first resistance element being operably attached to said first treadle, and said top end  
of said first resistance element being adjustably attached to said frame at a first location  
within said range of attachment locations;

wherein adjustment of said top end of said first resistance element to a different location within said range of attachment locations changes a height of said first treadle; and

wherein said first resistance element is attached to said frame by a lead screw  
5 mechanism.

81. An exercise device as recited in claim 80, wherein said frame includes a second range of attachment locations, the exercise machine further comprising:

a second treadle pivotally mounted to said frame to pivot in a generally vertical plane;

10 a second resistance element having a top end and a bottom end, said bottom end of said second resistance element being operably attached to said second treadle, and said top end of said second resistance element being adjustably attached to said frame at a first location within said second range of attachment locations; and

wherein adjustment of said top end of said second resistance element to a  
15 different location within said second range of attachment locations changes a height of said second treadle.

82. An exercise device as recited in claim 81, wherein:

a dependency device is operably attached between said first and second treadles to cause one treadle to move up when the other treadle is moved down; and wherein

20 each of said resistance elements do not have a spring return feature.

83. An exercise device as recited in claim 81, wherein adjustment of said first treadle is independent of said second treadle, such that said treadles can be adjusted to different heights.

84. A dual deck exercise device comprising:  
5 a frame;  
a first treadle;  
a second treadle;  
a first scissors truss connecting the first treadle to the frame;  
a second scissors truss connecting the second treadle to the frame;  
10 each of said scissors trusses able to be moved between a lower position and an upper position; and  
each of said scissors trusses having a biasing member to resiliently bias said scissors truss towards said upper position.

85. An exercise device as recited in claim 84, further comprising:  
15 a dampener associated with each of said treadles.

86. An exercise device as recited in claim 84, further comprising:  
a dependency device operably associated between each of said treadles to cause one treadle to rise as the other treadle lowers.

87. An exercise device as recited in claim 84, wherein:  
20 said scissor trusses cause each of said treadles to remain parallel to a support surface as each truss moves downwardly.

88. An exercise device as recited in claim 84, wherein said biasing members are placed in tension as said treadles move from said upper positions towards said lower positions.

89. An exercise device as recited in claim 84, wherein said biasing members  
5 are placed in compression as said treadles move from said upper positions towards said lower positions.

90. A dampening device for an exercise machine having treadles, said device comprising:

a reservoir containing hydraulic fluid divided into first and second chambers by a  
10 valve;

a plunger in each of said first and second chambers, each of said plungers operably associated with a treadle; and

wherein as one plunger is pushed into its respective chamber by said respective treadle, said hydraulic fluid transfers through said valve to said other chamber and pushes  
15 said other plunger and its respective treadle outwardly.

91. A dampening device as defined in claim 90, wherein said valve is adjustable to allow a varying dampening effect.

92. A dampening device as defined in claim 90, wherein said plungers are provided within first and second cylinders, and said first and second cylinders are sealed  
20 by a shared cap.

93. A dampening device as defined in claim 92, wherein said cylinders are mounted side-by-side within a housing.

94. A dampening device as defined in claim 93, wherein said cap includes a passage joining said first and second chambers for flow of hydraulic fluid between said first and second chambers.

95. A dampening device as defined in claim 90, wherein said plungers are associated with said respective treadles through a dependency device.

96. A dampening device as recited in claim 90, further comprising a biasing mechanism associated with each treadle for biasing the treadle upward.

97. A dampening device as recited in claim 96 wherein each of said biasing mechanisms comprises a corresponding spring.

98. A dampening device as recited in claim 97, wherein:  
each of said plungers comprises a corresponding piston;  
each of said plungers is operably associated with its corresponding treadle by a corresponding connection rod; and

wherein said springs are operably connected between a frame of the exercise machine and the treadles.

99. An exercise device comprising:  
a frame;  
a first treadle pivotally attached to said frame for pivotal movement of said first treadle in a generally vertical plane;

a first dampener attached between said frame and said first treadle to resist movement of said treadle; and

a first spring attached between said frame and said first treadle to urge said first treadle upwardly.

5           100. An exercise device as defined in claim 99, further comprising:

a second treadle pivotally attached to said frame for pivotal movement of said second treadle in a generally vertical plane;

a second dampener attached between said frame and said second treadle to resist movement of said treadle; and

10           a second spring attached between said frame and said first treadle to urge said second treadle upwardly.

101. An exercise device as defined in claim 100, wherein:  
said first and second springs are elastomeric.

102. An exercise device as defined in claim 101, wherein said first and second  
15           springs are stretched by a downward movement of their corresponding first and second treadles.

103. An exercise device as defined in claim 101, wherein said first and second springs are compressed by a downward movement of their corresponding first and second treadles.

20           104. An exercise device as defined in claim 100, wherein said first dampener resists downward movement of said first treadle.

105. An exercise device as defined in claim 100, wherein a resistance level for said first dampener is adjustable.

106. An exercise device as defined in claim 100, wherein said first dampener resists upward movement of said first treadle, but wherein said resistance to said upward  
5 movement of said first treadle is overcome by said upward urging of said first spring.

107. A dual deck exercise device comprising:  
a frame;  
a left treadle pivotally attached to said frame and having a front and rear left treadle rollers with a left tread extending around said left treadle rollers;  
10 a right treadle pivotally attached to said frame and having a front and rear right treadle rollers with a right tread extending around said right treadle rollers;  
a left drive roller mechanism exterior to the left tread and to drive said left tread;  
and  
a right drive roller mechanism exterior to the right tread and to drive said right  
15 tread.

108. The exercise device of claim 107, wherein:  
said left drive roller mechanism is in frictional engagement with said left tread;  
and  
said right drive roller mechanism is in frictional engagement with said right tread.

20 109. The exercise device of claim 107, wherein:

said left drive roller mechanism is in frictional engagement with one of said front and rear left treadle rollers; and

said right drive roller mechanism is in frictional engagement with one of said front and rear right rollers.

5           110.   The exercise device of claim 107, wherein:

said left drive roller mechanism is in positive engagement with one of said front and rear left treadle rollers; and

said right drive roller mechanism is in positive engagement with one of said front and rear right rollers.

10           111.   The exercise device of claim 107 wherein said left and right drive roller mechanisms comprise a common drive roller shared by both drive roller mechanisms.

112.   The exercise device of claim 111, wherein said common drive roller is in frictional engagement with said left tread and said right tread.

15           113.   The exercise device of claim 111, wherein said common drive roller is in frictional engagement with on of said front and rear left treadle rollers and one of said front and rear right treadle rollers.

114.   The exercise device of claim 111, wherein said common drive roller is in positive engagement with on of said front and rear left treadle rollers and one of said front and rear right treadle rollers.

20           115.   The exercise device of claim 111, wherein said common drive roller is provided with a control mechanism in order to vary a speed of said left and right treads.



116. An exercise device, comprising:

a frame;

a treadle assembly pivotally attached to said frame by a pivotal connection; and

an upright attached to said frame; wherein

5       said treadle assembly is operative to pivot about said pivotal connection to a storage position substantially parallel to said upright.

117. The exercise device as set forth in claim 116, further comprising:

a side rail pivotally attached to said upright by a side rail pivot; and wherein

said side rail is operable to pivot about said side rail pivot into a storage position.

10       118. The exercise device as set forth in claim 116, further comprising a latching mechanism for retaining said treadle assembly in said storage position.

119. The exercise device as set forth in claim 116, wherein the exercise device is free standing on said frame with said treadle assembly and said upright in a generally vertical orientation when said treadle assembly is in said storage position.

15       120. The exercise device as set forth in claim 119, where said treadle assembly is rotated to an over-center orientation when said treadle assembly is in said storage position.

121. An exercise device, comprising:

a base frame with a treadle assembly pivotally attached thereto;

20       an upright pivotally attached to said base frame by an upright storage pivot; and

a side rail pivotally attached to said upright by a side rail pivot; wherein

said side rail is operable to pivot about said side rail pivot into a storage position;  
and wherein

said upright is operable to pivot about said upright storage pivot into a storage position.

5           122.   The exercise device of claim 121, further comprising:

a lateral support operably attached to said base frame by a base frame pivot; and  
wherein

said base frame is operable to pivot about said base frame pivot into a laterally supported storage position.

10           123.   The exercise device of claim 121, wherein the exercise device is free standing on a front end of said base frame and a bottom portion of said upright with said base frame and said upright in a generally vertical orientation when said upright is pivoted into said storage position.

124.   An exercise device comprising:

15           a rear base frame having a treadle assembly attached to thereto;

a front base frame pivotally attached to a front portion of said rear base frame at a base frame pivot;

an upright attached to said front base frame; and

20           wherein said rear base frame is pivotal about said base frame to pivot between an operational position wherein said front base frame is generally transverse to said upright

and a storage position wherein said rear base frame is proximate to and generally parallel with said upright.

125. The exercise device of claim 124 wherein said treadle assembly is attached to a rear portion of said rear base frame.

5        126. The exercise device as set forth in claim 124, further comprising:  
a side rail pivotally attached to said upright by a side rail pivot; and wherein  
said side rail is operable to pivot about said side rail pivot into a storage position.

127. The exercise device as set forth in claim 124, wherein the exercise device  
is free standing on said front base frame with said rear base frame and said upright in a  
10 generally vertical orientation when said rear base frame is in said storage position.

128. The exercise device as set forth in claim 127, wherein said rear base frame  
is rotated to an over-center orientation when said rear base frame is in said storage  
position.

129. A an exercise device, comprising:  
15 a main frame;  
a housing fixedly attached to said main frame; and  
at least one treadle attached to said main frame; wherein  
the height of said housing at least equals a height of said treadle during operation of said  
treadle.

20        130. The exercise device of claim 129, further comprising a resistive element  
operationally attached between said treadle and said housing.

131. The exercise device of claim 129, wherein said housing is of single-piece construction.

132. The exercise device of claim 129, further comprising a return element operationally attached between said treadle and said housing.

5 133. An exercise apparatus comprising:

a frame;

first and second movable belt treadle assemblies pivotally mounted to the frame;

a first dampening device coupled between the frame and the first treadle assembly;

10 a first biasing device coupled between the frame and the first treadle assembly;

a second dampening device coupled between the frame and the first treadle assembly; and

a second biasing device coupled between the frame and the first treadle assembly.

134. The exercise apparatus of claim 133 wherein the first and second movable  
15 belt treadle assemblies comprise respective drive rollers; further comprising:

a motor mounted to the frame;

a drive shaft, the drive rollers being affixed to the drive shaft and the drive shaft being rotatably coupled to the frame to provide a pivot for the first and second treadle assemblies; and

20 a torque transfer mechanism coupling the drive shaft to the motor.

135. The exercise apparatus of claim 133 wherein:

the frame comprises an upright member; and

the first and second movable belt treadle assemblies are pivotally mounted to the upright member.

136. The exercise apparatus of claim 135 wherein the upright member is a  
5 single elongated structure, the first and second movable belt treadle assemblies being mounted on respective opposing sides of the structure.

137. The exercise apparatus of claim 135 wherein the upright member comprises two spaced-apart elongated structures, the first and second movable belt treadle assemblies being mounted between the structures.

10 138. The exercise apparatus of claim 135 wherein the first and second movable belt treadle assemblies are pivotally mounted to the upright member with a fixed pivot.

139. The exercise apparatus of claim 135 wherein the first and second movable belt treadle assemblies are pivotally mounted to the upright member with a variable pivot.

140. The exercise apparatus of claim 133 wherein:

15 the first dampening device and the first biasing device are integrated into a first unitary device coupled between the upright and the first treadle assembly; and

the second dampening device and the second biasing device are integrated into a second unitary device coupled between the upright and the first treadle assembly.

141. The exercise apparatus of claim 133 wherein the first and second movable  
20 belt treadle assemblies comprise:

respective belts having respective upper surfaces for friction engagement by a  
user's feet; and

a drive mechanism for driving the upper surfaces of the belts in a direction away  
from where the first and second movable belt treadle assemblies are pivotally mounted to  
5 the frame.

142. The exercise apparatus of claim 141 wherein:

the frame comprises an upright member;

the pivot mechanism has a single pivot axis; and

the first and second movable belt treadle assemblies are pivotally mounted to the  
10 upright member along the pivot axis.

143. The exercise apparatus of claim 133 wherein the first and second movable  
belt treadle assemblies comprise:

respective belts having respective upper surfaces for friction engagement by a  
user's feet; and

15 a drive mechanism for driving the upper surfaces of the belts in a direction toward  
where the first and second movable belt treadle assemblies are pivotally mounted to the  
frame.

144. The exercise apparatus of claim 143 wherein:

the frame comprises an upright member;

20 the pivot mechanism has a single pivot axis; and

the first and second movable belt treadle assemblies are pivotally mounted to the upright member along the pivot axis.

145. An exercise device comprising:

a pair of treadle assemblies operably connected to a frame for complementary  
5 opposing movement in generally vertical planes as a user steps on a tread portion of each treadle assembly; and

wherein each tread portion is formed by a separate movable belt;

a driver mechanism for moving said movable belts with respect to said treadle assemblies;

10 wherein said driver mechanism can drive said belts simultaneously with said treadle assemblies moving in complementary fashion with respect to each other; and

wherein said treadle assemblies can be locked in a fixed orientation relative to said frame such that said exercise device can function as a treadmill.

146. An exercise device comprising:

15 a pair of treadle assemblies operably connected to a frame for complementary opposing movement in generally vertical planes as a user steps on a tread portion of each treadle assembly; and

wherein each tread portion is formed by a separate movable belt;

a driver mechanism for moving said movable belts with respect to said treadle  
20 assemblies;

wherein said driver mechanism can drive said belts simultaneously with said treadle assemblies moving in complementary fashion with respect to each other; and

wherein said movable belts can be locked in a fixed position relative to said treadle assemblies such that the exercise device can function as a stepper.

5           147.   An exercise device comprising:

          a pair of treadle assemblies operably connected to a frame for complementary opposing movement in generally vertical planes as a user steps on a tread portion of each treadle assembly; and

          wherein each tread portion is formed by a separate movable belt;

10           a driver mechanism for moving said movable belts with respect to said treadle assemblies;

          wherein said driver mechanism can drive said belts simultaneously with said treadle assemblies moving in complementary fashion with respect to each other; and

          wherein said treadle assemblies can be locked in a fixed orientation relative to  
15   said frame such that said exercise device can function as a treadmill; and wherein said movable belts can be locked in a fixed position relative to said treadle assemblies such that the exercise device can function as a stepper.

          148.   An exercise apparatus comprising:

          a frame;

20           a first movable belt treadle assembly pivotally mounted to the frame;

          a second movable belt treadle assembly pivotally mounted to the frame;



a rocker arm pivotally mounted to the frame and having a first end and a second end;

a first tie rod having a first end coupled to the first end of the rocker arm and a second end coupled to the first treadle assembly;

5 a second tie rod having a first end coupled to the second end of the rocker arm and a second end coupled to the second treadle assembly;

wherein the first end of the first tie rod is coupled to the first end of the rocker arm by a universal joint, and the second end of the first tie rod is coupled to the first treadle assembly by a universal joint; and

10 the first end of the second tie rod is coupled to the second end of the rocker arm by a universal joint, and the second end of the second tie rod is coupled to the second treadle assembly by a universal joint.

149. The exercise apparatus of claim 148, wherein:

the second end of the first tie rod is coupled to the first treadle assembly at a side  
15 frame member on the first treadle assembly; and

the second end of the second tie rod is coupled to the second treadle assembly at a side frame member on the second treadle assembly.

150. An exercise apparatus comprising:

a frame;

20 a first movable belt treadle assembly pivotally mounted to the frame;

a second movable belt treadle assembly pivotally mounted to the frame;

a rocker arm pivotally mounted to the frame and having a first end and a second end;

a first tie rod having a first end coupled to the first end of the rocker arm and a second end coupled to the first treadle assembly;

5 a first biasing device having a first end coupled to the first end of the rocker arm and a second end coupled to the frame;

a second tie rod having a first end coupled to the second end of the rocker arm and a second end coupled to the second treadle assembly; and

a second biasing device having a first end coupled to the second end of the rocker  
10 arm and a second end coupled to the frame.

151. An exercise apparatus comprising:

a frame;

a first movable belt treadle assembly pivotally mounted to the frame;

a first biasing device operably provided between the frame and the first movable  
15 belt treadle assembly for acting on the first movable belt treadle assembly with a push-up biasing force;

a second movable belt treadle assembly pivotally mounted to the frame; and

a second biasing device operably provided between the frame and the second  
moveable belt assembly for acting on the second movable belt treadle assembly with a  
20 push-up biasing force.

152. The exercise apparatus of claim 151 wherein the first and second biasing devices have fixed biasing characteristics.

153. The exercise apparatus of claim 152 wherein:  
the frame comprises a base frame member; and  
5 the first and second biasing devices are directly coupled to the base frame member.

154. The exercise apparatus of claim 151 wherein the first and second biasing devices have variable biasing characteristics.

155. The exercise apparatus of claim 154 wherein each of the first and second  
10 biasing devices comprises a spring and a variable length mechanism integrated with the spring to obtain the variable biasing characteristics thereof.

156. The exercise apparatus of claim 154 wherein the first and second biasing devices comprise respective springs and a common variable length mechanism to obtain the variable biasing characteristics thereof.

157. The exercise apparatus of claim 153, wherein the first and second biasing devices comprise helical springs.

158. The exercise apparatus of claim 157, wherein the helical springs bear against the base frame at one end and against a flange provided on their respective treadle assemblies on an other end.

159. An exercise apparatus comprising:  
a frame;

a first movable treadle assembly pivotally mounted to the frame;  
a second movable treadle assembly pivotally mounted to the frame; and  
a brake-based dampening assembly for dampening downward rotation of said  
movable treadle assemblies coupled to the frame having a first belt end coupled to  
5 the first movable treadle assembly and a second belt end coupled to the second  
movable treadle assembly.

160. The exercise apparatus of claim 159 wherein the brake-based dampening  
assembly comprises:

a single continuous dampening belt, the first and second belt ends being ends of  
10 the continuous dampening belt;

a brake;

a differential freewheel coupled to the brake and having a first side and a second  
side;

a pulley system for guiding the continuous dampening belt, the pulley system  
15 having a first pulley coupled to the first side of the differential freewheel, and a second  
pulley coupled to the second side of the differential freewheel.

161. The exercise apparatus of claim 159 wherein the brake-based dampening  
assembly comprises:

a single continuous dampening belt, the first and second belt ends being ends of  
20 the continuous dampening belt;

a brake; and

a pulley system for guiding the continuous dampening belt, the pulley system having a pulley coupled to the brake.

162. The exercise apparatus of claim 159 wherein the brake-based dampening assembly comprises:

5 a first dampening belt, the first belt end being an end of the first dampening belt;  
a second dampening belt, the second belt end being an end of the second dampening belt;

a brake;

a differential freewheel coupled to the brake and having a first side and a second  
10 side;

a first pulley system for guiding the first dampening belt, the first pulley system having a first pulley coupled to the first side of the differential freewheel; and

a second pulley system for guiding the second dampening belt, the second pulley system having a second pulley coupled to the second side of the differential freewheel.

15 163. The exercise apparatus of claim 159 wherein the brake-based dampening assembly comprises:

a first dampening belt, the first belt end being an end of the first dampening belt;

a second dampening belt, the second belt end being an end of the second dampening belt;

20 a first brake;

a second brake;

a first pulley system for guiding the first dampening belt, the first pulley system having a first pulley coupled to the first brake; and

a second pulley system for guiding the second dampening belt, the second pulley system having a second pulley coupled to the second side of the differential freewheel.

5           164.   The exercise apparatus of claim 159, further comprising an interconnect device such that when either of the movable belt treadle assemblies is pushed down, the other treadle assembly is correspondingly pushed up.

          165.   The exercise device of claim 164, wherein said dampening of said downward rotation of said treadle assemblies by said brake-based dampening assembly is  
10   provided by a resistance force applied to an upward rotation of said treadle assemblies and transmitted through said interconnection device.

          166.   An exercise apparatus comprising:

          a frame;

          a first movable tread treadle assembly pivotally mounted to the frame;

15           a second movable tread treadle assembly pivotally mounted to the frame; and

          a single continuous dampening belt having a first end and a second end, the first end being coupled to the first movable tread treadle assembly and the second end coupled to the second movable tread treadle assembly;

          a flywheel;

20           a differential freewheel coupled to the flywheel and having a first side and a second side; and

a pulley system for guiding the continuous dampening belt, the pulley system having a first pulley coupled to the first side of the differential freewheel, and a second pulley coupled to the second side of the differential freewheel.

167. An exercise apparatus comprising:

5 a frame;

a first movable tread treadle assembly pivotally mounted to the frame;

a second movable tread treadle assembly pivotally mounted to the frame; and

a single continuous dampening belt having a first end and a second end, the first end being coupled to the first movable tread treadle assembly and the second end coupled  
10 to the second movable tread treadle assembly;

a differential flywheel having a first side and a second side; and

a pulley system for guiding the continuous dampening belt, the pulley system having a first pulley coupled to the first side of the differential flywheel, and a second pulley coupled to the second side of the differential flywheel.

15 168. An exercise apparatus comprising:

a frame;

first and second movable tread treadle assemblies pivotally mounted to the frame;

a first biasing mechanism having a support member disposed on the first movable tread treadle assembly and a resilient member coupled to the frame; and

20 a second biasing mechanism having a support member disposed on the second movable tread treadle assembly and a resilient member coupled to the frame.

169. The exercise apparatus of claim 168 further comprising a flat spring coupled to the frame at generally the center thereof to establish a first arm and a second arm, wherein:

- the support member of the first biasing mechanism comprises a first rigid
- 5 protrusion from the first movable tread treadle assembly;
- the resilient member of the first biasing mechanism comprises the first arm of the flat spring;
- the support member of the second biasing mechanism comprises a second rigid protrusion from the second movable tread treadle assembly; and
- 10 the resilient member of the second biasing mechanism comprises the second arm of the flat spring;

170. The exercise apparatus of claim 168 further comprising a leaf spring coupled to the frame to present a concave aspect to the first and second movable tread treadle assemblies and to establish a first arm and a second arm, wherein:

- 15 the support member of the first biasing mechanism comprises a first surface associated with the first movable tread treadle assembly;
- the resilient member of the first biasing mechanism comprises the first arm of the leaf spring;
- the support member of the second biasing mechanism comprises a second surface
- 20 associated with the second movable tread treadle assembly; and



the resilient member of the second biasing mechanism comprises the second arm of the leaf spring.

171. The exercise apparatus of claim 168 further comprising a leaf spring coupled to the frame to present a convex aspect to the first and second movable tread  
5 treadle assemblies and to establish a first arm and a second arm, wherein:

the support member of the first biasing mechanism comprises a first surface associated with the first movable tread treadle assembly;

the resilient member of the first biasing mechanism comprises the first arm of the leaf spring;

10 the support member of the second biasing mechanism comprises a second surface associated with the second movable tread treadle assembly; and

the resilient member of the second biasing mechanism comprises the second arm of the leaf spring.

172. The exercise apparatus of claim 168 further comprising a multiple section  
15 torsion spring coupled to the frame at several locations and having a first torsion spring section and a second torsion spring section, wherein:

the rigid member of the first biasing mechanism comprises a first surface associated with the first movable tread treadle assembly;

the resilient member of the first biasing mechanism comprises a linear section of  
20 the torsion spring extending from the first torsion spring section;

the support member of the second biasing mechanism comprises a second surface associated with the second movable tread treadle assembly; and

the resilient member of the first biasing mechanism comprises a linear section of the torsion spring extending from the second torsion spring section.

5        173.    The exercise apparatus of claim 168 further comprising a flat spring mounted on the frame and having at least a first prong and a second prong disposed toward the first and second movable tread treadle assemblies, wherein:

the support member of the first biasing mechanism comprises a first surface associated with the first movable tread treadle assembly;

10        the resilient member of the first biasing mechanism comprises the first prong;

the support member of the second biasing mechanism comprises a second surface associated with the second movable tread treadle assembly; and

the resilient member of the first biasing mechanism comprises the second prong.

174.    An exercise apparatus comprising:

15        a frame;

first and second movable tread treadle assemblies pivotally mounted to the frame;

a first cushioning mechanism having a rigid member and a resilient member disposed between the frame and the first movable tread treadle assembly; and

a second cushioning mechanism having a rigid member and a resilient member  
20        disposed between the second movable tread treadle assembly and the frame.

175.    The exercise apparatus of claim 174 wherein:

the rigid member of the first cushioning mechanism comprises a rigid protrusion from the first movable tread treadle assembly;

the resilient member of the first cushioning mechanism comprises a first soft rubber bumper coupled to the frame;

5        the rigid member of the second cushioning mechanism comprises a rigid protrusion from the second movable tread treadle assembly; and

the resilient member of the second cushioning mechanism comprises a second soft rubber bumper coupled to the frame.

176.    An exercise apparatus comprising:

10        a frame;

a first movable belt treadle assembly having a first belt, a first drive roller, and first and second rollers;

wherein the first drive roller and the first and second rollers are disposed in a first generally inverted triangular arrangement with the first drive roller being at the apex of  
15        the first triangular arrangement;

wherein the first belt is disposed about the first drive roller and the first and second rollers;

wherein the first movable belt treadle assembly is pivotally mounted to the frame in proximity to the first drive roller;

20        a second movable belt treadle assembly having a second belt, a second drive roller, and third and fourth rollers;

wherein the second drive roller and the third and fourth rollers are disposed in a second generally inverted triangular arrangement with the second drive roller being at the apex of the second triangular arrangement;

wherein the second belt is disposed about the second drive roller and the third and  
5 fourth rollers; and

wherein the second movable belt treadle assembly is pivotally mounted to the frame in proximity to the second drive roller.

177. The exercise apparatus of claim 176 further comprising:

first and second pivot brackets attached to the frame;

10 a motor coupled to the frame;

a drive shaft, the first and second drive rollers being affixed to the drive shaft and the drive shaft being rotatably coupled to the pivot brackets to provide a pivot for the first and second treadle assemblies; and

a torque transfer mechanism coupling the drive shaft to the motor.

15 178. The exercise apparatus of claim 176 further comprising:

a first dampening device coupled between the frame and the first movable belt treadle assembly;

a first biasing device coupled between the frame and the first movable belt treadle assembly;

20 a second dampening device coupled between the frame and the second movable belt treadle assembly;

a second biasing device coupled between the frame and the second movable belt treadle assembly; and

a reciprocating linkage coupled between the first movable belt treadle assembly and the second movable belt treadle assembly.

5           179. The exercise apparatus of claim 178 wherein:

the frame comprises an upright;

the first dampening device and the first biasing device are integrated into a first unitary device coupled between the upright and the first movable belt treadle assembly; and

10           the second dampening device and the second biasing device are integrated into a second unitary device coupled between the upright and the second movable belt treadle assembly.

180. An exercise apparatus comprising:

a frame;

15           a first treadle assembly pivotally coupled to the frame and having at least a first front roller and a first rear roller, and a first movable belt disposed about the first front roller and the first rear roller, a first step area being defined on the first movable belt between the first front roller and the first rear roller, and a deck being absent from the first step area; and

20           a second treadle assembly pivotally coupled to the frame and having at least a second front roller and a second rear roller, and a second movable belt disposed about the

second front roller and the second rear roller, a second step area being defined on the second movable belt between the first front roller and the first rear roller, and a deck being absent from the second step area.

181. The exercise apparatus of claim 180 wherein:

5 the first movable belt comprises reinforced edges; and  
the second movable belt comprises reinforced edges.

182. The exercise apparatus of claim 181, wherein said first and second movable belts are placed in tension between said reinforced edges.

183. The exercise apparatus of claim 180, further comprising  
10 a first biasing device coupled between the frame and the first treadle assembly;  
and  
a second biasing device coupled between the frame and the second treadle assembly.

184. The exercise apparatus of claim 180 further comprising:  
15 a motor mounted to the frame;  
a drive shaft, the first and second front rollers being affixed to the drive shaft and the drive shaft being rotatably coupled to the frame to provide a common pivot axis for the first and second treadle assemblies; and  
a torque transfer mechanism coupling the drive shaft to the motor.

20 185. The exercise apparatus of claim 180 further comprising:  
a motor mounted to the frame;

a drive shaft, the first and second rear rollers being affixed to the drive shaft and the drive shaft being rotatably coupled to the frame to provide a common pivot axis for the first and second treadle assemblies; and  
a torque transfer mechanism coupling the drive shaft to the motor.

5        186.    An exercise apparatus comprising:

         a frame;

         a first treadle assembly pivotally coupled to the frame and having at least a first front roller and a first rear roller, a first movable belt disposed about the first front roller and the first rear roller, and a first deck having a first user-selectable position in  
10    proximity to a first step area defined between the first front roller and the first rear roller and a second user-selectable position removed from the first step area; and

         a second treadle assembly pivotally coupled to the frame and having at least a second front roller and a second rear roller, a second movable belt disposed about the second front roller and the second rear roller, and a second deck having a first user-  
15    selectable position in proximity to a second step area defined between the second front roller and the second rear roller and a second user-selectable position removed from the second step area.

         187.    The exercise apparatus of claim 186, further comprising

         a first biasing device coupled between the frame and the first treadle assembly;  
20    and

a second biasing device coupled between the frame and the second treadle assembly.

188. The exercise apparatus of claim 186 wherein:

the first movable belt comprises reinforced edges; and

5 the second movable belt comprises reinforced edges.

189. An exercise machine, comprising a first treadle, a second treadle and a low friction surface located between said treadles.

190. The exercise machine of claim 189, wherein the low friction surface includes a set of rollers.

10 191. The exercise machine of claim 189, wherein the low friction surface includes a slidable surface.

192. The exercise machine of claim 191, wherein the slidable surface is nylon or Teflon.

15 193. The exercise machine of claim 191, wherein the slidable surface is lubricated.

194. The exercise machine of claim 189, further comprising a third treadle and wherein the low friction surface is a portion of the third treadle.

195. The exercise machine of claim 194, wherein the low friction surface includes a set of rollers.

20 196. The exercise machine of claim 194, wherein the low friction surface includes a slidable surface.



197. The exercise machine of claim 196, wherein the slidable surface is nylon or Teflon.

198. The exercise machine of claim 196, wherein the slidable surface is lubricated.

5 199. The exercise machine of claim 194, wherein the third treadle is biased in an upward position.

200. The exercise machine of claim 194, wherein the third treadle alternately tracks the first and second treadles between a highest treadle displacement point and a point midway between the highest treadle displacement point and a lowest treadle  
10 displacement point

201. The exercise machine of claim 189, wherein the first treadle includes a first edge, the second treadle includes a second edge adjacent to the first edge, and the low friction surface includes at least a portion of one of said edges.

202. A protective guard for an exercise apparatus having a first treadle  
15 assembly and a second treadle assembly, the protective guard comprising:

a base shroud having at least one treadle aperture;

a first treadle shroud connected with said first treadle assembly;

a second treadle shroud connected with said second treadle assembly; and

wherein said first treadle shroud and said second treadle shroud enclose areas  
20 between said first treadle assembly, said second treadle assembly, and said base shroud.

203. The protective guard of claim 202, wherein said a least one treadle aperture includes a first treadle aperture and a second treadle aperture.

204. The protective guard of claim 202, wherein said first treadle shroud includes a first outside side shield, a first front side shield, and a first inside side shield;

5 wherein said second treadle shroud includes a second outside side shield, a second front side shield, and a second inside side shield; and wherein said first inside side shield is adjacent to said second inside side shield.

205. The protective guard of claim 202, wherein said base shroud is defined by a front portion, a rear portion, a left portion having a plurality of left side shield tracks, a  
10 right portion having a plurality of right side shield tracks, and a top portion;

wherein said first treadle shroud includes a first outside side shield and a first inside side shield, said first outside side shield having a first plurality of tracks;

wherein said second treadle shroud includes a second outside side shield and a second inside side shield, said second outside side shield having a second plurality of  
15 tracks;

wherein said first plurality of tracks slidably engage said plurality of right side shield tracks; and

wherein said second plurality of tracks slidably engage said plurality of left side shield tracks.

20 206. The protective guard of claim 202, further comprising:

a center shield between said first treadle assembly and said second treadle assembly; and

wherein said center shield is pivotally supported on said exercise apparatus by a center drive bracket and a spring.

5           207. A protective guard for an exercise apparatus having a first treadle assembly and a second treadle assembly, the protective guard comprising:

a base shroud defined by a right side portion, a left side portion, and a rear side portion;

a first treadle shroud connected with said first treadle assembly; and

10           a second treadle shroud connected with said second treadle assembly.

208. The protective guard of claim 207, wherein said first treadle shroud includes a first outside side shield, a first front side shield, and a first inside side shield;

wherein said second treadle shroud includes a second outside side shield, a second front side shield, and a second inside side shield; and

15           wherein said first inside side shield and said second inside side shield are connected with a flexible shield.

209. The protective guard of claim 207, wherein said first treadle shroud includes a first outside side shield, a first front side shield, and a first inside side shield;

20           wherein said second treadle shroud includes a second outside side shield, a second front side shield, and a second inside side shield; and

wherein said first inside side shield is adjacent to said second inside side shield.

210. The protective guard of claim 207, wherein said base shroud is further defined by a first front portion and a second front portion;

wherein said first front portion is partially enclosed by said first treadle shroud when said first treadle assembly is in a first downward position; and

5 wherein said second front portion is partially enclosed by said second treadle shroud when said second treadle assembly is in a second downward position.

211. The protective guard of claim 210, wherein a plurality of tracks on said first front portion engage a plurality of tracks on said first treadle shroud; and

wherein a plurality of tracks on said second front portion engage a plurality of  
10 tracks on said second treadle shroud.

212. The protective guard of claim 210, further comprising:  
a first accordion pleated shroud connected with said first treadle shroud and said base shroud; and

a second accordion pleated shroud connected with said second treadle shroud and  
15 said base shroud.

213. The protective guard of claim 207, wherein said base shroud is further defined by a front portion and a top portion;

wherein a first accordion pleated shroud is connected with said first treadle shroud and said top portion of said base shroud;

20 wherein a second accordion pleated shroud is connected with said second treadle shroud and said top portion of said base shroud; and

wherein a center shield is adjacent to said first treadle shroud and said second treadle shroud.

214. The protective guard of claim 207, wherein said base shroud is further defined by a front portion;

5 wherein a first multi-fold shroud is connected with said first treadle shroud and said base shroud; and

wherein a second multi-fold shroud is connected with said second treadle shroud and said base shroud.

215. The protective guard of claim 207, further comprising:  
10 a center shield between said first treadle assembly and said second treadle assembly; and

wherein said center shield is pivotally supported on said exercise apparatus by a center drive bracket and a spring.

216. An adjustable length treadle assembly for an exercise apparatus  
15 comprising:

a treadle frame having a first side tube slidingly engaged with a second side tube, and a third side tube slidingly engaged with a fourth side tube;

a first roller connected with said first side tube and said third side tube;

a second roller connected with said second side tube and said fourth side tube;

20 an endless treadle belt between said first roller and said second roller; and

a belt deck having a first section connected with said first side tube and said third side tube, a second section connected with said second side tube and said fourth side tube, and at least one removable third section, wherein said at least one removable third section is engaged with and positioned between said first section and said second section.

5           217. An adjustable length treadle assembly for an exercise apparatus comprising:

a treadle frame having a first side tube slidingly engaged with a second side tube, and a third side tube slidingly engaged with a fourth side tube;

a first roller connected with said first side tube and said third side tube;

10           a second roller connected with said second side tube and said fourth side tube;

an endless treadle belt between said first roller and said second roller; and

a belt deck having a first section, a second section, and at least one third section, wherein said at least one third section is removably positioned between said first section and said second section.

15           218. A treadle assembly for an exercise apparatus comprising:

a treadle frame having an adjustable length;

a first roller connected with said treadle frame;

a second roller connected with said treadle frame;

an endless treadle belt between said first roller and said second roller; and

a belt deck having a first section and at least one second section, wherein said at least one second section is removably positioned between said first section and said second roller.

219. An adjustable length treadle assembly for an exercise apparatus  
5 comprising:

a treadle frame having a selectively extendable and retractable frame;

a treadle belt operably engaged to pass around the treadle frame; and

a belt deck having an adjustable length to comport with the adjustment of the treadle frame.

10 220. An apparatus for preventing treadle motion in an exercise machine,  
comprising:

a pedal;

a bar affixed to the pedal;

a pivot at least partially received within said bar;

15 a pivot structure engaging said pivot and affixed to a base of said exercise  
machine, said pivot pivoting within said pivot structure;

a locking tab structure operationally connected to said bar and operative to engage  
a motion-restricting element formed on an underside of said treadle, said motion-  
restricting element preventing motion when said locking tab structure engages said  
20 motion-restricting element.

221. The apparatus of claim 220, wherein the locking tab structure comprises:  
at least one locking tab;

a lock upright affixed at an angle to said at least one locking tab; and  
a hinge about which the lock upright rotates.

222. The apparatus of claim 221, wherein said motion-restricting element  
comprises a channel.

5           223. The apparatus of claim 220, further comprising a bar slot formed in said  
bar; wherein

said pivot is at least partially received within said bar slot; and  
said pivot moves along said bar slot when said pedal is depressed.

224. The apparatus of claim 220, further comprising a pivot slot formed in said  
10 base of said exercise machine; and wherein

said pivot structure slides along said pivot slot when said pedal is  
depressed.

225. An apparatus for preventing treadle motion in an exercise machine,  
comprising:

15           a pedal;

a bar affixed to the pedal and defining a bar slot therein;

a pivot at least partially received within said bar;

a lockout wheel;

a wheel rod extending from the lockout wheel and at least partially  
20 received within said bar slot;

a lockout cam operative to engage said treadle to prevent motion; and



an axle operatively connecting said wheel rod to said lockout cam.

226. An apparatus for preventing treadle motion in an exercise machine,  
comprising:

a slider handle;

5 a slider bar affixed to said slider handle;

a slider support affixed to said exercise machine, said slider bar passing  
through said slider handle; and

a slider key affixed to said slider bar.

227. An exercise device, comprising:

10 a handle bar;

a treadle; and

an interconnect operationally attaching said handle bar to said treadle, said  
interconnect associating a handle bar motion to a treadle motion.

228. The device of claim 227, wherein:

15 said interconnect is a solid member;

said treadle motion occurs laterally; and

the lateral motion of said treadle drives a lateral handle bar motion.

229. The device of claim 228, wherein

said interconnect is a solid member;

20 said handle bar motion occurs laterally; and

the lateral motion of said handle bar drives a treadle motion.

230. The device of claim 228, wherein:

said interconnect comprises an element chosen from the group comprising  
a one-way bearing and a ratchet-and-pawl mechanism;

said motion of said handle bar is a back and forth lateral motion; and

5        said association of said motion of said handle bar to said treadle motion  
comprises:

imparting a counter-clockwise motion to said treadle when said handle bar  
motion is a back lateral motion; and

10       not imparting a motion to said treadle when said handle bar motion is a  
forward lateral motion.

231. The device of claim 228, wherein:

said handle defines a handle slot;

a first end of said interconnect is at least partially received within said  
handle;

15       a second end of said interconnect is affixed to said treadle; and

said first end of said interconnect reciprocates within said slot in response  
to a motion of said handle.

232. An exercise device, comprising:

a handle bar;

20       a treadle;

an upright attached to said handle bar at a first end and attached to said treadle at a second end; and

an interconnect operationally attaching said handle bar to said upright, said interconnect resisting a handle bar motion.

5           233. The device of claim 232, further comprising a hinged joint attaching said upright to said handle bar; and wherein

said interconnect comprises a shock.

234. The device of claim 232, further comprising a spring joint attaching said upright to said handle bar; and wherein

10           said interconnect comprises a fixed-length member.

235. An exercise apparatus, comprising:

a first handle bar;

a protrusion extending from said first handle bar; and

a first treadle slidably attached to said protrusion.

15           236. The exercise apparatus of claim 235, wherein:

the slidable attachment between said first treadle and said second treadle comprises a slot running at least partially along the length of the treadle; and

a motion of said handle bar transfers force along said protrusion to said slot, thereby imparting a motion to said first treadle.

20           237. The exercise apparatus of claim 236, wherein said first handle bar is pivotally attached to a frame of said exercise apparatus.

238. The exercise apparatus of claim 237, further comprising:  
a second treadle pivotally attached to said frame; and  
an interlink affixed to said first and said second treadles, said interlink  
operative to move said second treadle in a direction opposite said motion of said first  
5 treadle.

239. The exercise apparatus of claim 238, wherein said interlink is Z-shaped.

240. The exercise apparatus of claim 238, wherein said interlink is C-shaped.

241. An exercise apparatus, comprising:

a frame;  
10 a first handle bar;  
a first protrusion attached to said first handle bar;  
a first treadle operably attached to said frame;  
a first slot formed in a side of said first treadle, said slot slidably mated to  
said first protrusion;  
15 a second handle bar;  
a second protrusion attached to said second handle bar;  
a second treadle operably attached to said frame;  
a second slot formed in a side of said second treadle, said slot slidably  
mated to said second protrusion; wherein  
20 a first motion of said first handle bar slides said protrusion along said first  
slot, transferring said first motion to said treadle; and

a second motion of said second handle bar slides said protrusion along  
said second slot, transferring said second motion to said treadle.

242. A resistive handle structure for an exercise device, comprising:

a handle bar;

5 an anchoring element; and

a resistive element affixed to the handle bar at a first end and the  
anchoring element at a second end, the resistive element providing a resistance acting  
against a motion of the handle bar.

243. The handle structure of claim 242, wherein the resistive element is a  
10 piston.

244. The handle structure of claim 243, wherein the anchoring element  
comprises a treadle, and the resistive element transfers a motion of the handle bar to  
move the treadle.

245. The handle structure of claim 243, wherein the anchoring element  
15 comprises a treadle, and a motion of the treadle provides increases said resistance of said  
resistive element.

246. A height adjustment mechanism for an exercise apparatus, comprising:

a bracket affixed to a support element of said exercise apparatus;

a slot defined in said bracket;

20 an adjustor pin at least partially held within said slot;

a height adjustment mechanism operatively attached to said adjustor pin;

and

a treadle operatively attached to said adjustor pin.

247. The height adjustment mechanism of claim 246, further comprising:

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a motor;

a drive belt operatively attached to said motor and said treadle; and

a tensioner device for tensioning a drive belt,

248. The height adjustment mechanism of claim 247, wherein the tensioner

device comprises:

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a tensioner head resting on said drive belt;

a spring attached to said tensioner head; and

a base attached to said spring and further attached to said support element;

wherein

said spring exerts resistive force on said drive belt through said tensioner

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head, said resistive force increasing as said treadle is raised.

249. The height adjustment mechanism of claim 246, further comprising:

a motor, said motor affixed to said treadle; wherein

said motor raises and lowers with said treadle.

250. A treadle motion adjustment mechanism for an exercise apparatus,

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comprising:

a throw bar;

a pivot about which said throw bar pivots;  
a throw adjust operative to move along said throw bar;  
a throw pull operatively attached to said throw adjust, the throw pull  
operative to permit motion of said throw adjust along said throw bar;

5           a treadle operatively attached to said throw adjust; wherein  
moving said throw adjust along said throw bar away from said pivot varies  
a throw of said treadle.

251.   The treadle motion adjustment mechanism of claim 250, further  
comprising:

10           an angle bar attached to said throw adjust;  
an angle adjust operative to move along said angle bar; wherein  
said angle bar forms the operative attachment between said treadle and  
said throw adjust; and  
moving said angle adjust along said angle bar varies an operating angle of  
15   said treadle.